

REMARKS

I. Introduction

With the addition of claims 27 and 28, claims 9 to 28 are pending in the present application. In view of the foregoing amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

Applicants thank the Examiner for considering the previously filed Supplemental Information Disclosure Statement, PTO-1449 paper and cited references.

II. Objection to the Drawings

The drawings were objected to under 37 C.F.R. 1.83 (a). The Office Action alleges that the limitation of the plurality of stop elements as recited in claim 9 is not shown in the Figures. Applicants respectfully submit that the drawings show all of the features as recited in claim 9, as amended. The Office Action further alleges that Figures 1a and 1b fail to show the cross-section cut corresponding to Figures 4 and 5. Applicants respectfully submit that the drawings and Specification, as amended, make clear that Figures 2 to 5 represent alternative embodiments of the cross section illustrated in Figure 2. Accordingly, arrows, labeled 3, have been deleted from Figures 1a and 1b. Further, a circle has been added to Figure 1b to clearly show sleeve 10, as in Figure 1a. No new matter has been added. It is therefore respectfully that this objection has been obviated, and withdrawal of this objection is respectfully requested.

III. Objection to the Specification

The Specification was objected to due to an alleged informality. The Office Action asserts that the last paragraph on page 10 of the Specification is confusing. Applicants respectfully submit that the Specification, as amended, overcomes the present objection. Therefore, withdrawal of the objection to the Specification is respectfully requested.

IV. Objection to th Claims

Claims 9 to 12 were objected to due to various alleged informalities. Claims 10 and 12 were objected to due to their dependency from one of claims 9 and 11. Claims 9 and 11 have been amended herein without prejudice as per the Examiner's suggestion. Therefore, Applicants respectfully submit that claims 9 to 12, as amended, overcome the objection to the claims. Accordingly, withdrawal of the objection to claims 9 to 12 is respectfully requested.

V. Rejection of Claims 9 to 12 and 18 to 22 Under 35 U.S.C. § 103(a)

Claims 9 to 12 and 18 to 22 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,352,157 ("Ochs et al.") in combination with JP-8312703 ("JP '703"). Office Action at p. 4. It is respectfully submitted that the combination of Ochs et al. and JP '703 does not render obvious claims 9 to 12 and 18 to 22 herein for the following reasons.

Ochs et al. purportedly relate to a speed-adaptive torsional vibration damper. The damper is stated to include a hub ring 1, interconnected via first spring elements 3 to a flywheel 2, and second and third spring elements 4, 8. See col. 3, lines 32 to 38 and lines 47 to 48. The third spring 8 is stated to be premolded, immovably on the flywheel 2. See col. 3, lines 55 to 57. Ochs et al. do not disclose the sleeve arranged in the shaft, as recited in claims 9 and 11. Further, JP '703, which purportedly relates to an anti-vibration damper for a propeller shaft or bush and light-sensitive drum, does not cure the deficiencies of Ochs et al. Nor is JP '703 relied upon to cure the above noted deficiencies of Ochs et al. More specifically, the combination of Ochs et al. and JP '703 does not disclose, or even suggest, a sleeve arranged in the shaft and rotatable with the shaft, a plurality of flexible stop elements disposed circumferentially between each adjacent pair of spring elements and disposed between the mass body and the sleeve to define a discrete space to limit a vibration travel of the mass body at least in the radial direction, as recited in claim 9. Further, the combination of Ochs et al. and JP '703 does not disclose, or even suggest, a sleeve arranged in the shaft and rotatable with the shaft, a mass body mounted concentrically in the sleeve, wherein at least one the mass body and the sleeve at least partially form, in circumferentially opposite regions between the rubber spring elements, a plurality of stop elements configured to limit a vibration travel of the mass body in at least the radial direction, as recited in claim 11. Nor

does the combination of Ochs et al. and JP '703 does not disclose, or even suggest, the stop elements including at least one of: flexible stop elements extending from the sleeve arranged concentrically in the propeller shaft, the stop elements filling substantially an entire portion of a space located between the mass body, the rubber spring elements and the sleeve with a radial gap between the stop elements and the mass body; flexible stop elements extending from the mass body, the stop elements filling substantially the entire portion of the space located between the mass body, the rubber spring elements and the sleeve with a radial gap between the stop elements and the sleeve; and portions of at least one of the mass body and the sleeve projecting toward each other in opposite areas to limit a vibration path of the mass body at least in a radial direction at least in sections around the mass body, as recited in claim 21.

The Office Action alleges without any support that the space between the flywheel 2 and the first spring elements 3 comprises a sleeve. See Office Action at par. 9. However, as indicated above, Ochs et al. specifically state that the third spring 8 is premolded immovably on the flywheel 2 and that hub ring 1 is interconnected to flywheel 2 via third spring elements 4, 8. See col. 3, lines 32 to 38 and lines 55 to 57. Nowhere do Ochs et al. disclose, or even suggest, a sleeve between the flywheel 2 and the spring elements 3. Therefore, the combination of Ochs et al. and JP '703 does not disclose all of the limitations of claims 9, 11 and 21.

Nor does the combination of Ochs et al. and JP '703 disclose, or even suggest, a gap, as recited in amended claims 18 to 20. Specifically, the combination of Ochs et al. and JP '073 does not disclose, or even suggest, a gap, between one of (i) the mass body and the flexible stop elements and (ii) the flexible stop elements and the shaft, that is configured such that one of (a) the mass body and the flexible stop elements and (b) the flexible stop elements and the shaft do not contact in a non-rotating state of the shaft, as recited in amended claim 18. Further, the combination of Ochs et al. and JP '073 does not disclose, or even suggest, a gap between the stop elements and the shaft that is configured such that the stop elements do not contact the shaft in a non-rotating state of the shaft, as recited in claim 19. Further, the combination of Ochs et al. and JP '073 does not disclose, or even suggest, a gap, between the stop elements and the mass body that is

configured such that the mass body and the stop elements do not contact in a non-rotating state of the shaft, as recited in claim 20.

Ochs et al. are stated to include third spring elements 4, 8 which contact upon the shaft reaching certain rotational speeds. Abstract. Ochs et al. do not disclose, or even suggest, either a gap between third spring element 8 and flywheel 2 or a gap between third spring element 4 and hub ring 1 such that these elements do not contact each other in a non-rotating state of the shaft. As indicated above, the third spring element is stated to be premolded to ring 1 at supporting surfaces 10. See col. 3, lines 61 to 64. Further, the third spring 8 is stated to be premolded, immovably on the flywheel 2 and the third spring element 4 is stated to be premolded to hub ring 1 at surfaces 10. See col. 3, lines 55 to 57 and lines 61 to 64. Nor is JP '703 relied upon to remedy these deficiencies of Ochs et al. Therefore, the combination of Ochs et al. and JP '703 does not disclose all of the limitations of claims 18 to 20.

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial burden of presenting a prima facie case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish prima facie obviousness, the prior art reference(s) must teach or suggest all of the claim limitations. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). As established above, the combination of Ochs et al. and JP '703 does not disclose, or even suggest, all of the limitations of claims 9, 11 and 18 to 20. It is therefore respectfully submitted that the combination of Ochs et al. and JP '703 does not render claims 9, 11 and 18 to 20 unpatentable.

As for claim 10, which depends from claim 9, and therefore includes all the limitations of claim 9, it is respectfully submitted that this dependent claim is allowable for at least the same reasons given above in support of the patentability of claim 9. In re Fine, 837 F.2d 1071 (Fed. Cir. 1988) (any dependent claim that depends from a non-obvious independent claim is non-obvious).

As for claim 12, which depends from claim 11, and therefore includes all the limitations of claim 11, it is respectfully submitted that this dependent claim is allowable for at least the same reasons given above in support of the patentability of claim 11. Id.

As for claim 22, which depends from claim 21, and therefore includes all the limitations of claim 21, it is respectfully submitted that this dependent claim is

allowable for at least the same reasons given above in support of the patentability of claim 21. Id.

In view of all of the foregoing, withdrawal of this rejection is respectfully requested.

VI. Rejection of Claims 11, 12 and 18 Under 35 U.S.C. § 103(a)

Claims 11, 12 and 18 were rejected under 35 U.S.C. § 103(a) as unpatentable over Ochs et al. Applicants respectfully submit that claims 11, 12 and 18 are patentable over Ochs et al. for at least the reasons submitted above.

Specifically, Ochs et al. do not disclose, or even suggest, a sleeve arranged in the shaft and rotatable with the shaft, a mass body mounted concentrically in the sleeve, wherein at least one the mass body and the sleeve at least partially form, in circumferentially opposite regions between the rubber spring elements, a plurality of stop elements configured to limit a vibration travel of the mass body in at least the radial direction, as recited in claim 11.

As for claim 12, which depends from claim 11, and therefore includes all the limitations of claim 11, it is respectfully submitted that this dependent claim is allowable for at least the same reasons given above in support of the patentability of claim 11. Id.

As for amended claim 18, Applicants respectfully submit that Ochs et al. do not disclose, or even suggest, a gap, between one of (i) the mass body and the flexible stop elements and (ii) the flexible stop elements and the shaft, that is configured such that one of (a) the mass body and the flexible stop elements and (b) the flexible stop elements and the shaft do not contact in a non-rotating state of the shaft.

Therefore, withdrawal of this rejection is respectfully requested.

VII. Rejection of Claim 17 Under 35 U.S.C. § 103(a)

Claim 17 was rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,374,219 ("Kohara et al."). It is respectfully submitted that Kohara et al. do not render obvious claim 17 for the following reasons.

Claim 17 has been amended to recite that a contact surface of each stop element extends over a larger circumferential angle than the spring elements and than between an area between each stop element and each adjacent

rubber spring element, such that each stop element occupies a large portion of a space between the mass body, the spring elements and the shaft. Applicants respectfully submit that the stop elements 16A of Kohara et al. do not extend over a larger circumferential angle than the spring elements 23A and than between an area between each stop element 16A and each adjacent spring element 23A. Therefore, withdrawal of this rejection is respectfully requested.

VIII. New Claims 27 and 28

New claims 27 and 28 have been added herein. It is respectfully submitted that new claims 27 and 28 do not add any new matter and are fully supported by the present application, including the Specification. Because claim 27 depends from claim 9, it is respectfully submitted that claim 9 is patentable over the references relied upon for at least the same reasons given above in support of the patentability of claim 9; and because claim 28 depends from claim 21, it is respectfully submitted that claim 28 is patentable over the references relied upon for at least the same reasons submitted above in support of the patentability of claim 21.

IX. Conclusion

It is therefore respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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Dated: May 7, 2004

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